Chapter 13
Recasting Lecture Material Using Podcasts: An Educational Psychology Case Study

Penny Van Bergen

Abstract The aim of the current study was to investigate the characteristics of effective podcasting in an educational psychology class. Given the practical context in which the investigation was embedded, an action research approach was used. In Cycle One, a *How To* procedural lecture was recast as a series of 37-min podcasts. Students surveys demonstrated that the podcasts led to enhanced enjoyment and understanding of the assignment procedures being scaffolded. In Cycle Two, a traditional live lecture was withdrawn from the curriculum. Instead, students were required to access the lecture podcast that had been recorded using iLecture 1 year earlier. Students rated the podcast less favorably than they did podcasts for topics in which a live lecture was also available. To investigate these somewhat discrepant findings, a participatory approach was used in Cycle Three. A student focus group identified two key factors driving their perceptions of podcasts: the provision of choice and the lecturer's intent. Students felt disengaged when they perceived that no effort had gone into the preparation of the lecture. In contrast, they were engaged when they perceived that sufficient scaffolding and support had been provided. Together, the findings suggest that supplementary podcasts are an effective tool for facilitating student learning. When podcasts are used as the primary method of instruction, however, efforts must be made to address students' perceptions of lecturer intent.

Keywords Lectures • Podcasts • Procedural knowledge • Declarative knowledge • Engagement

P. Van Bergen (✉)
Macquarie University, Sydney, NSW 2052, Australia
e-mail: penny.vanbergen@mq.edu.au

13.1 Introduction

Over the last decade, the traditional university lecture has come under fire. Whereas learning science encourages active cognitive engagement on the part of the learner (Bruning, Schraw, & Ronning, 1999), lectures—according to their critics—instead promote passivity. It is argued that the typical lecture provides either little or no opportunity for student participation or collaboration (see Folley, 2010), tends to bore students (Exley & Dennick, 2009), and reinforces an antiquated transmission model of teaching: that is, the authoritative sage on the stage (Laurillard, 2002). Exley and Dennick (2009, p. 3) highlight a famous yet anonymous quote in which lecturing is defined as "the transference of the notes of the lecturer to the notes of the students without passing through the brains of either." Biggs and Tang (2007, pp. 104–105) in turn suggest that universities are saturated with lectures not because they are effective but simply because they are expected:

> Many academics start from the assumption that their major activity is to give a 'lecture', which is after all what the timetable says they should be doing. University planners and architects accordingly design 'lecture theatres', equipping them with stage and spotlight, as if skilled performers are to provide some pleasing entertainment there… there are more effective ways of using the space in those large 'lecture' theatres.

Notwithstanding these arguments, broad-brush arguments to abandon lectures may not be the answer. First, lectures should not be viewed in isolation but as part of a holistic pedagogical approach. Where lectures are used effectively to scaffold students' construction of important conceptual and epistemological knowledge, tutorials and workshops can then be used to enable students' engagement in higher-order discussion, analysis, and decision-making about that knowledge, provide forums in which new procedural skills are practiced, and provide research-based extension activities that build on the preliminary base knowledge (see Bruning et al., 1999). The lecture in this context is therefore simply a springboard for further development. This is entirely different to a pedagogical approach in which the lecture is the only form of instruction available: an approach much more likely to fall prey to the threats of passivity and disengagement outlined above.

Of course, the appropriateness of lecturing in any curriculum design, even when paired with tutorials or other activities, will depend on the discipline. MacDonald (1994) draws a distinction between compact or *constrained* disciplines such as the sciences, with well-defined problem parameters and solution pathways, agreed-upon goals, and cumulative knowledge construction across the discipline, and *unconstrained* disciplines such as the humanities, with varied goals, interests, and methods, "diffuse" knowledge construction across the discipline and, in some cases, relativistic views of knowledge. In the former, lectures provide an important means of acquainting oneself with disciplinary knowledge, practices, and priorities (Friesen, 2011). These cannot be known intuitively: thus, some form of direct instruction—lecturing or otherwise—is pedagogically appropriate. In the latter, where explanation of observed phenomena gives way to careful interpretation of problematized constructs, lecturing will be less effective at conveying disciplinary

practices and priorities than will activities that promote individual meaning making. Thus, the overall curriculum design and the discipline must each be considered.

Second, a *good* lecture, when delivered in a constrained discipline with agreed-upon goals and priorities, can and does engage students. Friesen (2011, p. 100) rejects the notion that universities are saturated with lectures due to "historical inertia," arguing instead that a good lecture captures the speakers' expertise, vibrancy, and creativity:

> [The lecture] allows the speaker to tie oneself to one's audience with a typewriter ribbon… using available media technologies or techniques colourfully but consistently to support vitality, action, or animation… to bring a body of knowledge alive in the minds of the student audience.

Folley (2010) too argues that lectures have the affordance of allowing complex information to be conveyed in an enthusiastic, engaging, and responsive way. In an online survey of 49 university students from the United Kingdom, he found that 32 % of students actually wanted more lectures, whereas 63 % thought the balance was about right. Only 5 % wanted fewer hours. He suggests that rather than abandoning lectures all together, the traditional didactic *style* of lecturing should change. Indeed, while the traditional "chalk-and-talk" lecture may encourage student passivity, there is much that can be done within lectures to cognitively engage students: inbuilt discussion topics, application activities, reflection points, and so on (e.g., Biggs & Tang, 2007).

Finally, it is not always possible to replace lectures with more interactive but staff-intense pedagogical approaches such as guided constructivist activities or discussion groups. In Australia, as in other higher education contexts, high student demand and underfunding necessitate a large cohort (see Murray & Summerlee, 2007; Nagel & Kotze, 2010). The pertinent question therefore seems to be not "should we abandon the lecture"—for the answer will surely depend on the kind of knowledge or skills to be constructed, the size of the cohort, and the overall curriculum design—but how, when the pedagogical goal is to acquaint large classes with specific background disciplinary content, can this be done most effectively?

13.1.1 *Podcasting as a Possible Solution*

Over the past 5 years podcasts have been recommended in educational technology literature as a potential alternative or supplement to the lecture (Folley, 2010; Taylor, 2009). In simple terms the podcast is an audio or an audiovisual presentation that users can either stream or download from the Internet (Van Zanten, Somogyi, & Curro, 2012: note that some researchers use the term vodcast when the presentation is audiovisual). Given its digital format, mass audience, and undetermined length, the educational podcast—whether audio or audiovisual—essentially offers a more portable and flexible means of engaging students in disciplinary content and activities that might otherwise be included in the lecture itself.

Higher education podcasting has most commonly been used to distribute full lectures online using web-based lecture technologies (WBLT) such as iLearn, Echo, and Lectopia (Chester, Buntine, Hammond, & Atkinson, 2011; Phillips et al., 2007), yet has also been used to distribute supplementary content in lieu of readings, to provide previews or recaps of the live lecture or to fulfill administrative roles such as test preparation or class announcements (Taylor, 2009).

Advocates of podcasting in the higher education classroom suggest several benefits: first, and perhaps most important, that the flexibility of podcasts enables the lecturer to better engage students; second, that any shift to podcasting may result in other changes to pedagogical style as a consequence of enforced pedagogical reflection; and third, that podcasting technology enables lecturers to better respond to student requests for more information, resources, and support to be provided to them (Hew, 2009; Parson, Reddy, Wood, & Senior, 2009). With reference to this latter point, a distinction between the provision of student support and the use of didactic, teacher-centered pedagogy is critical. According to a cognitivist view of learning, "spoon-feeding" is undesirable in any discipline, constrained or otherwise: what is critical for learning is a learner's active cognitive engagement in the disciplinary content (Mayer, 1992). A passive learner who is given no opportunity to practice and extend new skills and knowledge will not learn as deeply as one who is given these opportunities (Biggs & Tang, 2007). Nonetheless, adequate support for students' cognitive activity must still be provided. Such support takes the form of discussion prompts, the provision of background knowledge, a requirement that the student regulate his or her learning attempts, the development of incrementally demanding activities and assessments, and so on (Mayer, 1996; Yates, 2005). There is the opportunity when using supplementary podcasts to provide additional scaffolding that would not otherwise be available.

The benefits of podcasting are considered particularly important for a changing student population. Greater numbers of Australians now attend university than ever before, meaning that, like the lecture, any new pedagogy must be effective for a large cohort. Furthermore, the majority of university students now fall into the so-called net generation, Generation Y. Chester et al. (2011) describe Generation Y learners as digital natives, whereas Mikat, Martinez, and Jorstad (2007, p. 15) refer to the "new generation of technology-savvy student." Ennis and Gambrell (2010, p. 115) state that Generation Y, or "millennials," is "able to complete multiple tasks simultaneously due to interaction with technology at a young age." The clear implication of such commentary is that new students want, expect, and learn best when digital technologies are incorporated into learning. Finally, and notwithstanding the large numbers of Generation Y students at university, the student population is now more diverse than ever before. Parson et al. (2009, p. 226) argue that our lecture-tutorial model of pedagogy must evolve accordingly:

> Current students have more challenges facing them than has traditionally been the case. Many are mature students; almost all students have part-time jobs. Accordingly, teaching facilities need to become more flexible in their approach to providing education to students in these situations. Podcasting and vodcasting is one way in which this is possible, their portability as a medium is a very important and popular factor

Despite these potential educational benefits, little research has empirically examined students' own experiences of podcasts when used to replace or supplement traditional instruction (Orton-Johnson, 2009; Parson et al., 2009). Analysis of student attitudes toward podcasting only began appearing in literature in 2006 (Chester et al., 2011): at which time more than 50 % of university students still reported having never downloaded a podcast for recreational or educational use (Kennedy et al., 2007). Across the past 5 years, the preliminary findings produced have been equivocal.

In a trial of podcasts as the primary method of instruction in political science, for example, Taylor (2009) found equal numbers of detractors and enthusiasts amongst the student cohort. In this study, 11 half-hour podcasts were used. Parson et al. (2009) similarly found a muted response to professionally produced podcasts amongst their psychology cohort. Simple PowerPoint slides were rated by students to be more enjoyable and more useful than podcasts. Finally, Beylefeld, Hugo, and Geyer (2008) found mixed results when 148 first-year histology students were invited to listen to a podcasted lecture on muscle tissue: one of the more difficult course topics that many students had failed in previous years. Seventy-one percent of students indicated that they would like to see podcasts used in other courses too. Perplexingly, however, two-thirds of the cohort also indicated that they would rather have learned conventionally from the lecturer's notes. The authors argue that "[this] false dichotomy should be attributed to students' well-established dependency on spoon feeding in the form of lecture notes" (p. 954); however, this seems only one of several possible explanations. It is just as likely that students consider any additional provision of resources beneficial as long as it does not replace other resources. In support of this latter interpretation, Folley (2010; also see O'Bannon, Lubke, Beard, & Britt, 2011) found strong student support for the prompt "Podcasts could be used to enhance my lectures in some way" (average agreement rating 4.03 out of 5), but not for the prompt "Podcasts could be used to replace my lectures" (average rating 2.58 out of 5).

Of the research into student experiences of podcasts that *has* been conducted to date much either describes the implementation of podcasts in the classroom (Hew, 2009) or simply asks students whether or not they would like podcasts made available. In the most comprehensive review of podcasting in education to date, for example, Hew (2009) uncovered 153 articles and conference proceedings across both K-12 and higher education. A total of 123 were discarded as opinion pieces, reviews, or nonempirical descriptions of program implementations. Of the 30 remaining articles and proceedings, five discipline groups were represented: engineering and sciences, computing and IT, language, business and law, and education. Importantly, significant disciplinary differences were apparent: in the disciplines of engineering and science and computing and engineering, podcasts had been used in the classroom in 33 % of cases. In the discipline of education, with the lowest usage rate, podcasts had been used in just 3 % of classrooms.

There are two potential causes for the disciplinary differences in academics' adoption of podcasts in their classrooms. First, the increased use of podcasts in science, computing, and engineering may reflect the constrained nature of these

disciplines. Given the importance of building disciplinary background knowledge in the constrained discipline, podcasts may be seen as an appropriate tool by which such knowledge can be shared and built (see Yates, 2005). This is particularly so given the constrained disciplines' acceptance of direct instruction as a useful pedagogical approach (Mayer, 1996). Nonetheless, this explanation does not account for the very low rate of podcast use in education, where subdisciplines such as educational psychology are also constrained. Second, it may be that scientists and engineers—professionals who frequently use digital and/or technical equipment in their research—are simply more comfortable in engaging with digital tools such as podcasts for teaching. Thus, although podcasts are more *common* in the sciences, they should be just as *appropriate* in educational psychology and in other constrained disciplines.

13.1.2 Project Aims and Objectives

Given the recent pedagogical trend toward podcasting across higher education, the mixed findings regarding student experiences of podcasts, and the very low uptake of podcasts in education—despite the constrained nature of many educational subdisciplines—there remains a need to investigate students' experiences of podcasts in education classrooms. To address this gap, a small case study was conducted in an undergraduate educational psychology class. The aim of the project was to examine education students' experiences of podcasts when used to supplement, rather than change, a constrained curriculum. Podcasts were used to recast traditional lecture material used in the class.

In order to investigate students' perceptions of the podcasts, an action research approach was taken. At its most basic, action research is a cycle of studying a problem and planning its solution, taking action to implement the solution, and reflecting critically on the efficacy of the solution using evidence collected during or after implementation (Biggs & Tang, 2007; Riel, 2010). Action research is used not only for knowledge building more generally but also for finding solutions to a local problem (Heikkinen, Kakkori, & Huttunen, 2001; Zambo, 2007). This problem-solving approach was important for two reasons. First, it allowed a model of best practice podcasting to be developed and tested for possible use in the class. Second, it meant that any design flaws that may initially have hindered students' positive perceptions of podcasts could be examined and rectified. Once one action research cycle was complete, reflections were then used to frame the next cycle (Zuber-Skerritt, 2002).

13.1.3 Project Context

The study was conducted across three cohorts of a second-year undergraduate class titled *The Learner*. *The Learner* is an educational psychology class offered by the School of Education at a metropolitan university in Sydney, Australia. Students learn about the nature of educational psychology research and the importance of

evidence-based practice; about children's memory, motivation, and concepts of self; and about learning skills as they develop across childhood. Students come from a wide range of educational and vocational backgrounds and include undergraduate school leavers, mature-age undergraduates, and graduates who have returned to university to retrain after experience in industries including finance, law, science and technology, and marketing.

In Year One, 309 students enrolled in the class. Students' ages ranged from 18 to 66 ($M = 25$). In Year Two, 471 students enrolled in the class. Students' ages ranged from 18 to 63 ($M = 23$). In Year Three, 479 students enrolled in the class. Students' ages ranged from 18 to 66 ($M = 23$). In each cohort approximately 85 % of students were "internal" (in Year One, 82.21 %; in Year Two, 83.85 %; and in Year Three, 85.56 %). Internal students were enrolled in two 1-h lectures and a 1-h tutorial each week across 13 weeks. External students instead listened online to podcast recordings of the live lectures and were enrolled in 2 full-day weekend tutorial classes. All students completed an in-class test, a research report, and a final exam.

13.2 Cycle One: The "How to" Podcast

In Cycle One, students' perceptions of three purpose-built supplementary podcasts were considered. Each podcast was designed to support students' understanding of the major written assignment: the research report. Evidence-based practice in schools requires that teachers critically reflect on and apply emerging research and theory (Everton, Galton, & Pell, 2002). Thus, the goal of the research report task was to build students' capacity for critically reflective classroom practice. Students were asked to conduct a literature search using the library databases ERIC and PsycINFO, to collect child interview data, and to write a report analyzing their findings. Consistent with other constrained disciplines, a strict report-writing procedure was followed (see MacDonald, 1994).

13.2.1 Framing the Problem

Notwithstanding the importance of research engagement in education, preservice students notoriously report finding research tasks irrelevant and difficult (Deemer, 2009). In order to enhance students' engagement with the research assignment, scaffolding was provided in a 1-h *How To* lecture; however, the lecture format was poorly suited to the task. When developing procedural knowledge, students need opportunities to engage in the procedure itself (Biggs & Tang, 2007; Mayer, 1996). Practice is critical (Bruning et al., 1999; Mayer, 1992, 1996). During the lecture, no such opportunities were possible.

Given the challenges inherent to the *How To* lecture, it was hypothesized that students would find purpose-built scaffolding podcasts more useful. First, podcasts allow for shorter delivery. Lee and Chan (2007, p. 206) advocate for "bite-sized"

podcasts as a means of engaging students in learning that is naturally integrated into other day-to-day activities, whereas Roberts (2008) interviews with students suggest that podcasts should be between 5 and 15 min long. Folley (2010, p. 96) highlights the success of shorter podcasts in the educational and popular media, stating: "whether by design, market forces or simple necessity these websites [TED, iTunes education, YouTube education…] have hit on the golden time limit for a learning object in the form of a podcast being 10–20 minutes." Critically, shorter podcasts allow students to practice each skill in turn, without becoming overwhelmed by content (Bruning et al., 1999). Because many of the literature search and report-writing skills addressed were computer based, students could also open a second browser and practice these procedural skills simultaneously. If students felt they had missed a critical step in the procedure, they could repeat the podcast as necessary (see Van Zanten et al., 2012).

13.2.2   Procedure

In Year One students were delivered the original *How To* lecture. In Year Two, three podcasts consisting of slides and audio were created using the voiceover function in Keynote. In the first podcast the purpose and ethics of research were outlined. In the second podcast, students were guided through the literature search process. Screenshots of the library homepage and the databases PsycINFO and ERIC were overlaid with arrows and boxes highlighting important procedural steps (see Fig. 13.1). In the third podcast, the components of a standard research report—abstract, introduction, method, results, and discussion—were outlined. Each podcast was 7 min long and was uploaded to Blackboard. The original *How To* lecture was not delivered.

During the final lecture anonymous student surveys were distributed to internal students. During the same week, a link to an online version of the anonymous surveys was e-mailed to external students. In Year One, before the implementation of the three podcasts, students were asked two open-ended questions: "What did you like best about the course" and "what could be improved?" A text box was provided for them to write or type responses. There were 137 internal respondents and 30 external respondents. In Year Two, after the three podcasts had been implemented, students were instead asked: "What were the most positive aspects of the course?" and "what could be improved?" There were 115 internal respondents and 12 external respondents.

13.2.3   Results and Reflection

When asked "What did you like best about the course?" in Year One, only 2.6 % of students referred the major assignment and assignment resources. In contrast,
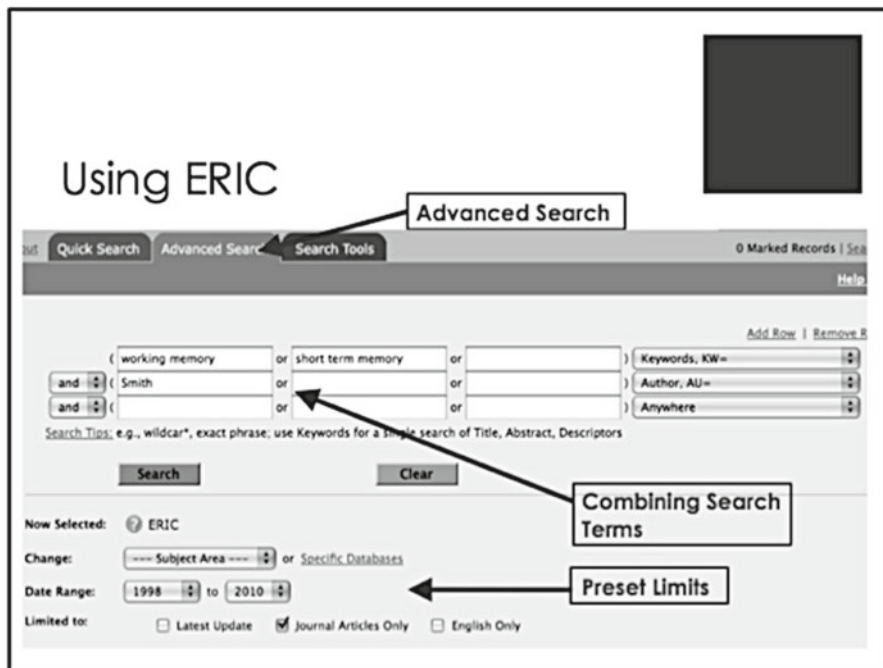
Fig. 13.1 A screenshot from the second podcast, "how to conduct a literature search"

23.3 % of students referred to the assignment when asked "What could be improved?" Open-ended responses revealed that many students did not perceive themselves to be well enough equipped to complete the tasks. For example, one student stated "I found the actual assessment tasks very daunting. More scaffolding is needed here to facilitate learning for all students," whereas another said: "not enough information was given on how to write and research a report and it was very vague." This call for additional support was common: students stated "there should be some assistance prior to the assessments" and "[We need] more explanation for the research assignments, especially for those who have no experience doing them."

In Year Two, after the three podcasts were implemented, increases in students' research engagement were observed. In responses to the prompt "What were the most positive aspects of the course?" the research assignments were referred to in 11.1 % of cases. Support for student learning was referred to in a further 40.7 % of cases. Students agreed that "plentiful help and guidance were made available to us" and "the resources available on Blackboard were great, lots of extra resources." In particular, support for the research assignment highlighted:

> The support and information given for preparation of assignments was highly valued and made clear what was expected, especially in regards to the presentation and structure requirements for assignments.

In response to the prompt "What could be improved?" only 12.0 % of responses referred to the assignments—a decrease from the 23.3 % of responses in Year One—whereas 20.0 % said "nothing."

Comparing Year One and Year Two outcomes, podcasts appeared an effective means of recasting procedural knowledge that had traditionally been delivered in lecture. Students did not just prefer the purpose-built podcasts: they also felt better equipped to succeed. There are two reasons that this might be the case. First, as highlighted by Folley (2010) and Roberts (2008), the brevity of the podcasts may have been important. Students could listen repeatedly and could learn a new skill before quickly moving on to practice that skill. Second, as highlighted by Taylor (2009) and Van Zanten et al. (2012), the flexibility of the podcast format may have been important. The podcast carried with it options to listen when and where convenient, to pause the recording, to work simultaneously on their assignment, and to rewind if they missed a step.

13.3   Cycle Two: The Full-Lecture Podcast

In Cycle Two, students' perceptions of full-lecture podcasts were examined. All lectures in the Education Department are recorded using iLecture, a WBLT audio capture program embedded within the Learning Management System Blackboard. By using iLecture, external students can download or stream the lecture without the need to attend class. Likewise, internal students who miss the traditional live lecture for work, illness, or personal preference can instead access the podcast recording. Finally, internal students who are present can use the podcast as a revision and study tool.

While the purpose-built podcasts used in Cycle One were well received by students, the WBLT-supported podcasts differed in two ways. First, while the WBLT-supported podcasts offered the same flexibility as the purpose-built podcasts in Cycle One, they do not offer the same brevity. Second, the purpose of each podcast was different. The Cycle One podcasts offered supplementary assignment support with a focus on procedural skills. The Cycle Two podcasts instead offered content delivery with a focus on declarative knowledge.

13.3.1   *Framing the Problem*

Research examining students' experiences of content-delivery podcasts has focused on podcasts used to complement or replace traditional lectures. In other words, a podcast designed to address the same content as a lecture is either made available alongside the lecture itself or made available in lieu of the lecture. Typically the podcast made available alongside the lecture is recorded from the lecture using WBLT, whereas the podcast made available in lieu of the lecture is purpose built (as in Cycle One) and may be shortened or adapted (e.g., Beylefeld et al., 2008;

Taylor, 2009). No studies to date report an instance where students who had previously been provided with both a live lecture and podcast have the live lecture option removed.

The question of student perceptions of podcasts when live lecture options are removed—with no commensurate, tangible increase in the provision of other resources—is important for two reasons. First, there is disagreement in the higher education literature regarding the extent to which students embrace podcasts, with no data available from education students. On the one hand, it is argued that podcasts are likely to appeal to the current crop of "digital native" learners (e.g., Chester et al., 2011; Parson et al., 2009). On the other hand, student support for podcasts appears strongest when they are provided alongside lectures (Folley, 2010; O'Bannon et al., 2011). Lecture removal, like lecture replacement, may be interpreted less favorably by students: particularly when the avenues by which curricular content can be accessed by students are actually decreased.

Second, the removal of live lectures is likely to become more common with time. Due to funding pressures, technological advances, and a wider range of students now studying at university, there are increasing calls for "innovative" online content delivery (Folley, 2010; Mikat et al., 2007; Nagel & Kotze, 2010; Taylor, 2009). Concurrently, the prevalence of WBLT to accompany live lectures has increased dramatically over the past 5 years (e.g., Chester et al., 2011; Phillips et al., 2007). Given that many classes now have stored a full set of recorded lectures from previous years, some may well respond to the increasing pressures for online delivery by uploading the same lecture podcast series that had previously been recorded live. At the university department in question, for example, one large undergraduate education unit has already moved from live lectures with WBLT-supported podcast recordings of the lecture to a trial of previously recorded WBLT-supported podcasts only. Several postgraduate education units are also being taught with podcasts.

13.3.2 Procedure

To examine students' perceptions of lecture removal, a target lecture, *Learning Styles*, was selected. This lecture forms part of a module on cognitive development and is scheduled to come toward the end of the module as an example of contentious issues in education today.

In Year Two, all lectures were (1) delivered live and (2) made available in podcast form using iLecture. In Year Three, all lectures but the target *Learning Styles* lecture were again delivered live and made available in podcast form using iLecture. The target *Learning Styles* lecture was not delivered live. Instead, the lecture podcast from Year Two was uploaded again in Year Three. Students were told during lecture 2 weeks prior that the *Learning Styles* live lecture would not be held and they should download or stream the podcast via iLecture. Students' anonymous lecture ratings for each lecture podcast were captured using iLecture. Scores ranged from 1 to 5, where 1 was the lowest rating and 5 was the highest rating. Ratings for the

Fig. 13.2 Student lecture
ratings for the target Learning
Styles lecture podcast and for
all other lecture podcasts,
averaged, across Years Two
and Three
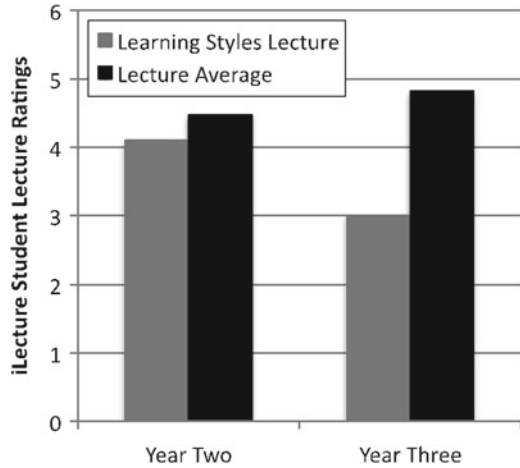
Learning Styles lecture podcast were then compared to ratings for the remaining lecture podcasts, both in Year One and Year Two.

As lecture ratings were made anonymously, it was not possible to control or match the students who rated each lecture podcast using iLearn. Not surprisingly, given the absence of a live *Learning Styles* lecture in Year Three, hit counters showed a sample size of 448 for the WBLT-supported *Learning Styles* lecture vs. an average of 315 for the remaining podcasts. In Year Two, when all lectures were presented both live and in podcast form, this difference was not as large: 316 for the *Learning Styles* lecture podcast vs. 297 on average for the remaining lectures.

13.3.3 Results and Reflection

In Year Two, when all lectures were available in both live and podcasted form, the difference between the target *Learning Styles* lecture podcast rating and the remaining lecture podcast ratings was only 0.37 (see Fig. 13.2). In Year Three, however, when the target *Learning Styles* lecture was available in podcast form only, students rated this podcast considerably less favorably than they did the remaining lecture podcasts. The difference between the *Learning Styles* lecture podcast rating and the average lecture podcast rating was 1.82. Although these findings are tentative, given that only one lecture was varied, this pattern nonetheless suggests that students prefer podcasts that are used as lecture supplements to podcasts that are used when lectures are removed.

The difference between Year Two and Year Three student ratings of the *Learning Styles* lecture podcast is particularly salient when it is considered that the same podcast was used each time. That is, the podcast that was recorded and subsequently rated in Year Two was also uploaded in Year Three. Unlike studies of lecture

replacement—in which student perceptions of a live lecture are compared to perceptions of a purpose-built replacement podcast (e.g., Beylefeld et al., 2008; Parson et al., 2009; Taylor, 2009)—the observed difference in student ratings cannot relate to changes in the content of the podcast, the length, or to the way it is delivered.

Unfortunately, the anonymous student ratings collected in Cycle Two did not allow an investigation of the *reasoning* underpinning students' rating scores nor did they allow individual students' ratings to be traced across lectures. Consistent with both Folley (2010) and O'Bannon et al. (2011), students may have rated the *Learning Styles* lecture more favorably in Year Two than in Year Three because they appreciated the provision of multiple resources. Despite listening to and rating the *Learning Styles* podcast online, students in Year Two nonetheless knew that the live lecture was available: indeed, some may have both attended the lecture in person and listened online later. In Year Three, this choice was not possible. Alternatively, given that the live *Learning Styles* lecture was not available in Year Three, the lower rating in this year may be a function of the increased number students rating the lecture podcast (448, compared to 315 for other lecture podcasts). Students who were motivated to attend live lectures when available may simply be more discerning or prefer the "theatre" of a live lecture (Friesen, 2011; Kazlauskas & Robinson, 2012). Thus, when instead forced to listen to the *Learning Styles* lecture in podcast form, this select group of students may have given the podcast a particularly low rating. Finally, it may be that students who would typically have chosen to attend a live lecture were simply less familiar with the podcasting technology. They may therefore have expressed their frustration with the *Learning Styles* lecture podcast through lower scores. In order to examine *why* the podcasted *Learning Styles* lecture received lower scores in Year Three, Cycle Three used a participatory approach to investigate student perceptions.

13.4 Cycle Three: A Participatory Approach

Cassell and Johnson (2006) describe four kinds of action research: experimental (or quasi-experimental), inductive, participatory, and deconstructive. In Cycle Two, a quasi-experimental approach was used to compare alternative content-delivery modes. Student lecture ratings, the dependent variable, were "neutrally collect[ed] from an independent social reality so as to empirically test causal predictions deduced from a priori theory" (Cassell & Johnson, 2006, p. 790). While the quasi-experimental design allowed causal predictions about students' preferences for different delivery modes to be tested, however, it did not allow the reasons behind those preferences to be investigated. *Participatory* action research, in contrast, attempts to break down the power imbalances inherent in researcher-participant relationships in order to give participants greater voice (Gaffney, 2008; Smith, Rosenzweig, & Schmidt, 2010). This approach, in which the research is conducted *with* rather than *on* students, capitalizes on students' "inside knowledge" to investigate both the problem and the solution from multiple angles (Vessey & DeMarco, 2008).

13.4.1   Framing the Problem

Because many research designs do not empower students to articulate their own experiences, the causes underpinning positive and negative student perceptions of learning and teaching provisions are often not well understood (Vera & Speight, 2003). In Cycle Two, anonymous student ratings showed disengagement from the target *Learning Styles* podcast offered in Year Three, but did not offer any definitive explanation for this finding. Specifically, it was unclear whether *all* students felt disengaged from the lecture podcast, and therefore rated it lower than they did other podcasts, or whether a *select* group of students—those who would usually have listened to the lecture live, when available—simply preferred the podcast format less. Moreover, it was also unclear what factors drove these preferences: particularly when the purpose-built assignment scaffolding podcasts in Cycle One had been well received. To more deeply investigate students' perceptions of podcasting technology, a participatory approach is critical.

Focus groups are frequently used in participatory research (Chiu, 2003) as a way of investigating open-ended problems from the perspective of students. Focus group practices have transformative potential in that, like participatory research more broadly, students are empowered to offer solutions shaped to their own interests and concerns (Chiu, 2003; Vessey & DeMarco, 2008). Using a focus group design, therefore, the aim of Cycle Two was to learn from students (1) what drives their engagement and disengagement from podcast technology and (2) in what ways podcasts should be used to enhance learning and teaching.

13.4.2   Procedure

The opportunity to participate in a focus group was advertised on the class Blackboard page. The advertisement stated that the aim of the group was to determine student views about (1) teaching and learning and (2) research preparation within the first half of the semester. It further stated that the session would last approximately 90 min. Twenty-three students responded via e-mail to express their interest in participating, and of these, 12 were able to participate at the time specified. Participants ranged in age from 20 to 38 years and included ten females and two males. All were internally enrolled, and seven stated that they regularly attended lectures in person.

The focus group was held during the mid-semester break, 3 weeks following the target *Learning Styles* lecture. Initially students were asked one open-ended prompt question: "What are the sorts of things that are going well in the unit so far, and what suggestions might you have?" In order to maximize student voice, the researcher did not contribute to the ensuing discussion other than to confirm student contributions. When the discussion had finished, students were asked six follow-up questions in turn. These questions addressed both (1) teaching and learning and

(2) research preparation and included: "Are there any resources provided in the course or outside the course that you find particularly useful?" and "Do you think conducting educational research is useful or valuable for education students? Why or why not?" To avoid demand characteristics, students were not prompted to discuss podcasting directly. Only one follow-up question related directly to the *Learning Styles* lecture. This question asked: "Out of all the lectures so far, some students have stated that they did not the Learning Styles lecture as much. Why do you think that might be?"

Field notes were taken throughout the session. To ensure that all data recorded in the field notes was both accurate and credible, member checks were conducted at the conclusion of each session. Participants were presented with the field notes and asked to verify that their meaning had been accurately represented. In the absence of formal reliability and validity measures, this strategy serves to establish the credibility of the qualitative data (Krefting, 1991). Participants were not paid or offered any course incentive for participating; however, they were offered refreshments at the conclusion of each session.

13.4.3   Results and Reflection

The student focus group identified two key factors driving their perceptions of podcasts: (1) the provision of choice and (2) lecturer intent. Note that other teaching and learning themes unrelated to podcasts also emerged; however, these are not discussed in this chapter.

First, the provision of choice was important. All students in the focus group reported valuing the WBLT-supported podcasts highly. Indeed, while five students exclusively used iLecture, the seven students who regularly attended lectures also appreciated the opportunity to "catch up if I have to miss the lecture for any reason" and to "juggle life better when I have lots of assignments." These findings are supported by previous research: students report using full-lecture podcasts both to consolidate material they may have missed live and as a support when other commitments mean that they are unable to attend (e.g., Phillips et al., 2007; Roberts, 2008; Van Zanten et al., 2012). Notwithstanding their positive perceptions of WBLT-supported podcasts, however, all students also wanted live lectures to continue. Although only seven students regularly attended lectures live, 11 stated that they enjoyed lectures "…if they're done well." Furthermore, four of the five students who did not regularly attend lectures attributed their reliance on WBLT to practicality rather than enjoyment: employment demands, clashes with other classes, and, in one student's case, "poor time management." Only one student did not enjoy lectures, stating: "I know I should go to them but I just can't… um, I can't engage that way and I always find myself nodding off… but they're good I suppose for people who do want them."

Second, lecturer intent was important. The focus group was in unanimous agreement that uploading podcasts from previous years "makes it look like the lecturer doesn't care as much." Not only is the choice between attending in person or

listening later removed, but, according to the focus group, the effort that lecturers should be making to support student learning is also absent. For example, one student who regularly attended lectures commented that "it doesn't feel like the lecturers put in any effort [when lectures are removed]," whereas another, who reported not attending live lectures personally, stated: "it kind of feels like a cop out." Students also raised the question of lecturer intent when referring to the purpose-built assignment scaffolding podcasts, suggesting not only that "it really helped to be able to sit down with the podcast open at the same time as ERIC [a literature search database]" but also that "it showed that you care and want us to learn."

In the primary and secondary school years, the student-teacher relationship is characterized by closeness, support, conflict, and dependency (Hamre & Pianta, 2001; Murray & Murray, 2004) and is a strong predictor of students' school engagement and future academic success (Midgley, Feldlaufer, & Eccles, 1989). Although student-teacher relationships have not been examined for these same characteristics in the higher education setting, Pratt, Collins, and Selinger (2001) do nonetheless draw a distinction between transmissive, developmental, social justice-oriented, nurturing, and apprenticeship concepts of teaching. It seems plausible that some degree of closeness and support, consistent with a nurturing perspective, would remain important to university students too. For example, a key source of university students' disengagement from very large lectures is the lack of personal contact between lecturers and students and not the lecture itself (e.g., Charters, Gunz, & Schoner, 2009; Wanous, Procter, & Murshid, 2010). Where lecturers of very large cohorts used alternative methods to increase the perception of closeness and support, however, such as welcome e-mails to the class, motivation and academic performance subsequently increase (Legg & Wilson, 2009).

It is worth noting here that students in the focus group were self-selected and therefore likely to be more strongly engaged than other students (Vessey & DeMarco, 2008). It is therefore unclear the extent to which perceptions of the focus group will mirror those of other students: for example, those who are already disengaged or those who were unable to participate in the group (external students, students with class or work clashes, and students with family commitments). Furthermore, the lecturer who had delivered the lecture series also led the focus group, thus potentially limiting students' willingness to criticize some elements of the course. The findings nonetheless offer a useful socio-emotional explanation for students' engagement and disengagement from podcasts. That students' dissatisfaction with lecture podcasts may stem not from podcasting as a medium but from their perceptions of lecturer intent has not previously been considered.

13.5   Conclusion

The present findings suggest that podcasts are a useful lecture supplement to traditional educational psychology lectures. Where the goal was to develop students' procedural knowledge for an assignment task, as in Cycle One, short purpose-built

podcasts represented an effective way to scaffold student learning. Where the goal was to scaffold discipline-specific lecture content, as in Cycle Two, then both lectures and podcasts appear appropriate. Indeed, students expressed a strong preference for both options to be provided. Cycle Three offers two explanations for these findings. First, having both a live lecture and a WBLT-supported lecture podcast provided the opportunity for choice. Given that the content of the live lecture and WBLT-supported podcast was identical, students did not like the idea of being restricted to one format only. Second, students expressed dissatisfaction at the perception that the use of the WBLT-supported podcast was less effortful for the lecturer than was an equivalent live lecture. The podcasts in Cycle One were deemed effective not only because they allowed for procedural skills to be practiced simultaneously but also because they had been purpose built. Students stated that time and care appeared to have gone into their construction.

Given the constrained nature of the educational psychology curriculum, these findings may not generalize well to unconstrained disciplines. Constrained disciplines emphasize the importance of hierarchically developed disciplinary knowledge and skills, thus making assignment scaffolding and content-delivery podcasts pedagogically appropriate (Yates, 2005). Unconstrained disciplines, in contrast, do not emphasize content delivery (MacDonald, 1994). Notwithstanding this potential limitation, the findings nonetheless offer useful information for podcast implementation in constrained disciplines. A carefully designed podcast may take considerable expertise and time to develop, with some universities now turning to professional production staff to assist in the process (Folley, 2010). Nonetheless, much of this work occurs behind the scenes. When students believe that podcasts have been implemented to save time for universities or for lecturers, they are likely to disengage. When students believe that podcasts are pedagogically appropriate, however, their engagement is strengthened.

References

Beylefeld, A. A., Hugo, A. P., & Geyer, H. J. (2008). More learning and less teaching? Students' perceptions of a histology podcast. *South African Journal of Higher Education, 22*, 948–956. doi:10.4314/sajhe.v22i5.42914.

Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university* (3rd ed.). New York: Open University Press.

Bruning, R. H., Schraw, G. J., & Ronning, R. R. (1999). *Cognitive psychology and instruction*. Upper Saddle River, NJ: Prentice-Hall.

Cassell, C., & Johnson, P. (2006). Action research: Explaining the diversity. *Human Relations, 59*, 783–814. doi:10.1177/0018726706067080.

Charters, D., Gunz, S., & Schoner, V. (2009). Using the case study approach to challenge students in an introductory business law course. *Journal of Legal Studies Education, 26*, 47–86. doi:10.1111/j.1744-1722.2009.00060.x.

Chester, A., Buntine, A., Hammond, K., & Atkinson, L. (2011). Podcasting in education: Student attitudes, behaviour and self-efficacy. *Educational Technology & Society, 14*, 236–247. http://dblp.uni-trier.de/db/journals/ets/ets14.html#ChesterBHA11

Chiu, F. (2003). Transformational potential of focus group practice in participatory action research. *Action Research, 1*, 165–183. doi:10.1177/14767503030012006.

Deemer, S. A. (2009). Using action research methodology to unite theory and practice. *Teaching Educational Psychology, 3*, 1–3.

Ennis, L. S., & Gambrell, E. A. (2010). A comparison of undergraduate faculty and millennial students regarding the utilisation of weblog and podcast technology in a teacher education department. *Turkish Online Journal of Distance Education, 11*, 114–122.

Everton, T., Galton, M., & Pell, T. (2002). Educational research and the teacher. *Research Papers in Education, 17*, 373–401. doi:10.1080/0267152022000031388.

Exley, K., & Dennick, R. (2009). *Giving a lecture: From presenting to teaching* (2nd ed.). New York: Routledge.

Folley, D. (2010). The lecture is dead long live the e-lecture. *Electronic Journal of e-Learning, 8*, 93–100.

Friesen, N. (2011). The lecture as a transmedial pedagogical form: A historical analysis. *Educational Researcher, 40*, 95–102. doi:10.3102/0013189X11404603.

Gaffney, M. (2008). Participatory action research: An overview. What makes it tick? *Kairaranga, 9*, 9–15. doi:10.1177/104973202129120061.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*, 625–638. doi:10.1111/1467-8624.00301.

Heikkinen, H. L., Kakkori, L., & Huttunen, R. (2001). This is my truth, tell me yours: Some aspects of action research quality in the light of truth theories. *Educational Action Research, 9*, 9–24. doi:10.1080/09650790100200142.

Hew, K. F. (2009). Use of audio podcast in K-12 and higher education: A review of research topics and methodologies. *Educational Technology Research and Development, 57*, 333–357. doi:10.1007/s11423-008-9108-3.

Kazlauskas, A., & Robinson, K. (2012). Podcasts are not for everyone. *British Journal of Educational Technology, 43*, 321–330. doi:10.1111/j.1467-8535.2010.01164.x.

Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., et al. (2007). The net generation are not big users of Web 2.0 technologies: Preliminary findings. *Proceedings of ASCILITE Singapore* (pp. 517–525).

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy, 45*, 214–222. doi:10.5014/ajot.45.3.214.

Laurillard, D. (2002). Rethinking teaching for the knowledge society. *EDUCAUSE Review, 37*, 16–25.

Lee, M., & Chan, A. (2007). Pervasive, lifestyle-integrated mobile learning for distance learners: An analysis of unexpected results from a podcasting study. *Journal of Open and Distance Learning, 22*, 201–218.

Legg, A. M., & Wilson, J. H. (2009). E-mail from professor enhances student motivation and attitudes. *Teaching of Psychology, 36*, 205–211. doi:10.1080/00986280902960034.

MacDonald, S. P. (1994). *Professional academic writing in the humanities and social sciences*. Carbondale, IL: SIUP.

Mayer, R. (1992). Cognition and instruction: Their historic meeting within educational psychology. *Journal of Educational Psychology, 84*, 405–412. doi:10.1037//0022-0663.84.4.405.

Mayer, R. (1996). Learners as information processors: Legacies of educational psychology's second metaphor. *Educational Psychologist, 31*, 151–161. doi:10.1080/00461520.1996.9653263.

Midgley, C., Feldlaufer, H., & Eccles, J. (1989). Student-teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development, 60*, 981–992. doi:10.2307/1131038.

Mikat, R. P., Martinez, R. D., & Jorstad, J. A. (2007). Podcasting for your class. *Journal of Physical Education, Recreation and Dance, 78*, 14–16.

Murray, C., & Murray, K. M. (2004). Child level correlates of teacher-student relationships: An examination of demographic characteristics, academic orientations, and behavioral orientations. *Psychology in the Schools, 41*, 751–762. doi:10.1002/pits.20015.

Murray, J., & Summerlee, A. (2007). The impact of problem-based learning in an interdisciplinary first-year program on student learning behaviour. *The Canadian Journal of Higher Education, 37*, 87–107.

Nagel, L., & Kotze, T. G. (2010). Supersizing e-learning: What a CoI survey reveals about teaching presence in a large online class. *Internet and Higher Education, 13*, 45–51. doi:10.1016/j.iheduc.2009.12.001.

O'Bannon, B. W., Lubke, J. K., Beard, J. L., & Britt, V. G. (2011). Using podcasts to replace lectures: Effects on student achievement. *Computers in Education, 57*, 1885–1892. doi:10.1016/j.compedu.2011.04.001.

Orton-Johnson, K. (2009). 'I've stuck to the path I'm afraid': Exploring student non-use of blended learning. *British Journal of Educational Technology, 10*, 837–847. doi:10.1111/j.1467-8535.2008.00860.x.

Parson, V., Reddy, P., Wood, J., & Senior, C. (2009). Educating the iPod generation: Undergraduate attitudes, experiences and understanding of vodcast and podcast use. *Learning, Media and Technology, 34*, 215–228. doi:10.1080/17439880903141497.

Phillips, R., Gosper, M., McNeill, M., Woo, K., Preston, G., & Green, D. (2007). *Staff and student perspectives on web based lecture technologies: Insights into the great divide*. Paper presented at ASCILITE, Singapore.

Pratt, D. D., Collins, J. B., & Selinger, S. J. (2001). *Development and use of the Teaching Perspectives Inventory (TPI)*. Paper presented at the Annual Meeting of the American Education Research Association. Retrieved on June 1, 2010, from https://facultycommons.macewan.ca/wp-content/uploads/TPI-online-resource.pdf

Riel, M. (2010). Understanding Action Research. Center for Collaborative Action Research, Pepperdine University. Retrieved on April 22, 2011, from http://cadres.pepperdine.edu/ccar/define.html

Roberts, M. (2008). Adventures in podcasting. *Political Science and Politics, 42*, 585–593. doi:10.1017/S1049096508080797.

Smith, L., Rosenzweig, L., & Schmidt, M. (2010). Best practices in the reporting of participatory action research: Embracing both the forest and the trees. *The Counseling Psychologist, 38*, 1115–1138. doi:10.1177/0011000010376416.

Taylor, M. Z. (2009). Podcast lectures as a primary teaching technology: Results of a one-year trial. *Journal of Political Science Education, 5*, 119–137. doi:10.1080/15512160902816249.

Van Zanten, R., Somogyi, S., & Curro, G. (2012). Purpose and preference in educational podcasting. *British Journal of Educational Technology, 43*, 130–138. doi:10.1111/j.1467-8535.2010.01153.x.

Vera, E. M., & Speight, S. L. (2003). Multicultural competence, social justice, and counselling psychology: Expanding our roles. *The Counseling Psychologist, 31*, 253–272. doi:10.1177/0011000003031003001.

Vessey, J. A., & DeMarco, R. F. (2008). The undergraduate research fellows program: A unique model to promote engagement in research. *Journal of Professional Nursing, 24*, 358–363. doi:10.1016/j.profnurs.2008.06.003.

Wanous, M., Procter, B., & Murshid, K. (2010). Assessment for learning and skills development: The case of large classes. *European Journal of Engineering Education, 34*, 77–85. doi:10.1080/03043790902721462.

Yates, G. C. (2005). "How obvious": Personal reflections on the database of educational psychology and effective teaching research. *Educational Psychology, 25*, 681–700. doi:10.1080/01443410500345180.

Zambo, D. (2007). The fuel of educational psychology and the fire of action research. *Teaching Educational Psychology, 2*, 1–12.

Zuber-Skerritt, O. (2002). A model for designing action learning and action research programs. *The Learning Organization, 9*, 143–149. doi:10.1108/09696470210428868.